

REMARKS

Applicants submitted an Information Disclosure Statement with Form PTO-1449 on February 13, 2002. The Examiner did not return a copy of the form, which lists the reference cited on page 1 of the specification. Accordingly, Applicants presume that the PTO-1449 Form was lost and herewith submit a copy of the form. The Examiner is requested to indicate that the reference has been considered by returning an initialed copy of the form.

Claims 1-20 remain pending since no claims have been canceled or added by the present amendment. Each of the claims has been rejected under 35 USC 102(e) as being anticipated by Sakamoto et al, U.S. Patent No. 6,204,739. Reconsideration of the rejection is respectfully requested for the following reasons.

According to each of independent claims 1, 13 and 17, an oscillator is set forth that has an active device, a substrate, a microstrip line formed on the substrate and a dielectric block disposed to couple with the microstrip line. The microstrip line and the dielectric block form a resonator and the active device and the resonator are electrically

connected with each other. The active device produces a negative resistance in a desired oscillation frequency band, and a resonance frequency of the lowest order mode of the dielectric block is lower than the desired oscillation frequency. Further, a resonance frequency band of one of the higher order modes covers the desired oscillation frequency. In a conventional oscillator having a dielectric resonator, on the other hand, usually the lowest order mode of the dielectric resonator is used as the oscillation frequency. None of the art of record, including Sakamoto, discloses using one of the higher order modes of a dielectric resonator as the oscillation frequency.

In particular, Sakamoto discloses a resonator using the lowest mode TE₀₁₀ as a resonant frequency. See col. 6, lines 50-67 of the reference which states that a TE₀₁₀-mode dielectric resonator part is formed, as shown in Fig. 8. Therefore, the reference is silent with respect to the claimed oscillator which includes the resonance frequency band of one of the higher order modes covering the desired oscillation frequency.

According to the present invention, by using the higher order modes for the oscillation frequency of the dielectric resonator, it is possible to expand the dimensions of the dielectric block in comparison to the dielectric block of a conventional resonator that uses the resonance frequency of the lowest order mode. Further, in the present invention, when the dielectric block is disposed very close to the microstrip line, it is possible to increase the ratio of the volume of the dielectric block to the area of the line conductor located adjacent to the dielectric block. This reduces the conductor loss in comparison to that of the conventional technique which uses a resonance frequency of the lowest order mode. Therefore, according to the present invention, the Q factor of the resonator can be raised to provide an oscillator of a low phase noise. This is brought out in the specification on page 6, lines 12+. Neither Sakamoto nor any of the references of record set forth the combination of claims 1-20 or the advantages achieved by the present invention. Therefore the 35 USC 102(e) rejection should be withdrawn.

In view of the foregoing amendments and remarks,
reconsideration and reexamination are respectfully requested.

Respectfully submitted,



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